

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The non-final Office Action mailed March 24, 2011 and the Notice of Panel Decision from Pre-Appeal Brief Review mailed September 2, 2011 have been received and their contents carefully reviewed.

Applicants have amended claim 1. No new matter has been added. Thus, claims 1-9 and 11-27 are currently pending with claims 11-26 having been withdrawn from consideration. Applicants respectfully request reconsideration of the pending claims.

The Office Action rejects claims 1-9 and 27 under 35 U.S.C. 103(a) as being unpatentable over Applicants' Admitted Prior Art (hereinafter "APA"). *Office Action* at p. 4. As indicated on page 6 of the Office Action, the Examiner is actually rejecting claims 1-9 and 27-28 over *APA* in view of U.S. Patent No. 6,188,458 to Tagusa ("*Tagusa*"). Applicants respectfully traverse the rejection.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example, "...a first plated adhesion conductive layer located only on the area of the third conductive layer exposed by the first contact hole and a second plated adhesion conductive layer located only on the area of the pad layer exposed by the second contact hole on, wherein the first plated adhesion conductive layer is directly contacted with the third conductive layer and the second plated adhesion conductive layer is directly contacted with the pad layer; a fourth conductive layer on the second insulating layer and the first plated adhesion conductive layer and electrically contacting a portion of a third conductive layer; a fifth conductive layer on the second insulating layer and the second plated adhesion conductive layer and electrically contacting the pad layer, wherein the first and second plated adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole, wherein the width of the first plated adhesion conductive layer is identical with the width of the first contact hole and the width of the second plated adhesion conductive layer is identical with the width of the second contact hole." None of the cited references, singly or in combination, teaches or suggests at least these features of the claim 1.

The Office purports that the *APA* discloses "a first adhesion conductive layer, 24B, on the exposed portion of a third conductive layer and a second adhesion conductive layer, 14B, on the

exposed portion of the pad layer.” *Office Action* at p. 5. Applicants respectfully disagree. *APA* discloses that “a metal material is deposited onto the upper portion of the gate insulating film 16 provided with the active layer 18 and the ohmic contact layer 20 and then patterned, to form source and drain electrodes 22 and 24.” *See Specification* at p. 3, lines 7-9. Therefore, the drain electrode 24 including the lower layer 24A and upper layer 24B is formed by depositing a metal material and patterning the metal. Applicants respectfully assert that the drain electrode formed by patterning including a lower layer 24A and an upper layer 24B is not an adhesion conductive layer, as suggested by the Office. However, even if one of ordinary skill in the art construed the *APA*’s lower drain electrode 24B as the “first adhesion conductive layer” recited in claim 1, the *APA* still fails to teach or suggest “a first plated adhesion conductive layer located only on the area of the third conductive layer exposed by the first contact hole,” as recited in independent claim 1.

The claimed invention provides for many benefits and advantages, for instance, a contact layer that reduces a contact resistance with the transparent electrode material such that only a single metal layer with good conductivity can be used as electrodes. *See Specification*, at least, at p. 8 line 9 - p. 8, lines 4-7. Hence, the contact layer includes a metal such as Mo, Ni, Cr, Cu, Ag or Pb formed at the surfaces of the drain electrode using a plating technique. *See Specification* at p. 6, lines 18-22 and p. 7, lines 18-21. In contrast, *APA* discloses a drain electrode 24 including an lower layer 24A and an upper layer 24B formed by depositing a metal material and patterning the metal. *APA* is not remotely concerned with a contact layer including a metal such as Mo, Ni, Cr, Cu, Ag or Pb formed at the surfaces of the drain electrode using a plating technique such that contact resistance is reduced and only a single metal layer with good conductivity can be used as electrodes. Accordingly, *APA* does not teach or suggest “a first plated adhesion conductive layer located only on the area of the third conductive layer exposed by the first contact hole and a second plated adhesion conductive layer located only on the area of the pad layer exposed by the second contact hole on, wherein the first plated adhesion conductive layer is directly contacted with the third conductive layer and the second plated adhesion conductive layer is directly contacted with the pad layer; a fourth conductive layer on the second insulating layer and the first plated adhesion conductive layer and electrically contacting a portion of a third conductive layer; a fifth conductive layer on the second insulating layer and the second plated adhesion conductive layer and electrically contacting the pad layer, wherein the first and second plated adhesion conductive layers are respectively contained within

the first contact hole and in the second contact hole, wherein the width of the first plated adhesion conductive layer is identical with the width of the first contact hole and the width of the second plated adhesion conductive layer is identical with the width of the second contact hole,” as recited in independent claim 1. Further, the Office admits that *APA* “does not explicitly disclose an embodiment wherein the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole.

Tagusa fails to cure the deficiencies of *APA*. The Office asserts that “*Tagusa* teaches ... a metal layer, 41 ... deposited such that it is exclusively and entirely contained [within] the contact hole, 26b.” *Office Action* at p. 5. Applicants disagree. *Tagusa* discloses “after the formation of the contact hole 26b, the cleaning solvent tends to permeate from the contact hole into the interface between the resin and the underlying transparent conductive film, causing the resin film to peel from the transparent conductive film” and “[i]n order to overcome this trouble ... the metal nitride layer 41 is formed on the transparent conductive film under the contact hole.” *Tagusa* at col. 12:16:23 and Figure 5. Therefore, *Tagusa* also applies the metal nitride layer 41 in the area outside of the contact hole at the interface between the resin and underlying transparent conductive film. In contrast, claim 1 recites “the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole, wherein the width of the first plated adhesion conductive layer is identical with the width of the first contact hole and the width of the second plated adhesion conductive layer is identical with the width of the second contact hole.”

For at least these reasons, Applicants respectfully request that the Office withdraw the 35 U.S.C. § 103(a) rejection of independent claim 1. Claims 2-9 and 27 depend from independent claim 1. It stands to reason that the 35 U.S.C. §103(a) rejection of those dependent claims should be withdrawn as well.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37

C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to Deposit Account No. 50-0911.

Dated: October 3, 2011

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